

NOTES ON SOME PORT JACKSON PLANTS.

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SPRENGELIA INCARNATA, Sm., BREVISTYLIS var. nov.

Following is a description of a well marked variety of *S. incarnata*. Its chief differences from the normal species lie in the narrower petals which are quite free and consequently soon drop off, the shorter style which does not protrude beyond the anthers, and the rather narrower ovarium.

Sydney district, viz :—Manly (1894) and Rose Bay (June, 1898), *J. H. Camfield*.

It may be desirable to describe the inflorescence and fruit in some detail.

Inflorescence not symmetrical, but rather scattered; the flowers generally borne in obtuse clusters towards and at the ends of the branchlets, but sometimes singly. Flowers pale, almost whitish, not much spreading, giving the impression of a half-expanded flower. Sepals about $2\frac{1}{2}$ lines long, very rigid, white, faintly tinged with pink, acutely acuminate, persistent. Petals barely as long as the sepals, soon fading, and falling from the flowers when detached from the plant. Stamens with flattish filaments which in the young state take on a peculiar almost double bent-like appearance over the summit of ovarium, but becoming nearly erect as the capsule matures. Anthers coherent, slightly papillose-hirsute and $\frac{3}{4}$ line in length. Ovary globose and depressed. Style short, barely 1 line long, not produced beyond the anthers. Capsule oblong with an obtuse apex. Seeds numerous, rather longer than broad, very distinctly longitudinally and transversely reticulate with slightly raised and broad striae.

It is a diffuse and bushy shrub of about 18 inches high, with rather slender branches, otherwise the foliage is similar to that of *S. incarnata*, but the habit of its inflorescence is distinct

from that of the normal species. It is obtuse, so that it is somewhat difficult to select the highest flower in the cluster, but this is an easy matter in *S. incarnata*. When fully expanded the flowers of the latter, *i.e.*, sepals and petals, are nearly at right angles to the axis of the flower; in our variety they spread only to an angle of about 30° to the axis. But the chief point of difference consists, as already indicated, in the shortness of the style (to which we have drawn attention in the name of our variety) and the fact that it is always completely hidden by the anthers. The style is generally produced beyond the anthers in *S. incarnata* for $\frac{1}{2}$ line. The anthers of the variety are also very short.

We have been giving attention to some of the New South Wales Banksias, particularly those which are found in the Port Jackson district (the original collecting ground for most of the east coast species), and desire to offer some notes in regard to two of them.

BANKSIA LATIFOLIA, R.Br., was originally described in *Trans. Linn. Soc.* x. 208. In *Prod.* 394 are Brown's own words, as follows:—"Foliis obovato-oblongis spinuloso-serratis basi acutis: subtus costatis reticulatis cinereo-tomentosis, perianthii unguibus sericeis; laminis glabris, caule fruticoso." Nothing is here said in regard to the size, variation in outline, &c., of the leaves.

In the figure in *Bot. Mag.* t. 2406 and in Bentham's description (*B.Fl.* v. 555) and all others we have observed, the plant is figured or described as with leaves "obovate-oblong, often truncate, irregularly serrate with short usually prickly teeth, contracted at the base, 4 to 8 inches long, $1\frac{1}{2}$ to 3 inches broad."

We desire to invite attention to the fact that the species is more variable than it is usually supposed to be, some forms, not specifically different, having been confused (quite reasonably) with *B. integrifolia* and even *B. marginata*. The confusion between *B. paludosa* and this variety will also be alluded to. We think that the great amount of variation in forms indubitably included under *B. latifolia* should be indicated in a name, and suggest the

name var. *minor* for its small-leaved forms. At the same time, we have every gradation between the variety and the normal form.

We would point out that var. *minor* never grows in swamps, just as typical *latifolia* never grows on dry ridges, where its var. *minor* abounds. It may therefore be that the difference of environment may be largely responsible for the differences between the normal species and its variety.

The variety *minor* is usually between 3 and 4 feet in height and less frequently it is up to 6 or 7 feet, but exceptionally up to 12 feet in height.

As regards the leaves of the variety, we have them as small as 2 inches long by half an inch broad (and incidentally it may be mentioned that the leaves of *B. latifolia* are up to 10 inches and more long). The small-leaved forms are as a rule more entire (sometimes they are as entire as *B. integrifolia* usually is and this assists in the confusion of this species with the variety now under discussion). Another character, also not an absolutely constant one, but often a useful guide, is that the under surface of the midrib of *B. latifolia* var. *minor* is very often clothed with a dense covering of reddish-brown hairs.

The fruits and seed, together with the sucker-growth, prove that our variety is entirely distinct from *B. integrifolia*.

To a less extent the same is true in regard to *B. marginata*. Its dissepiments and seeds are distinctly different from those of *B. latifolia* var. *minor*, not to mention other differences. At the same time the two plants have to our knowledge been frequently confused.

The sucker-growth of var. *minor* is also quite distinct from both that of *B. integrifolia* and *B. marginata*, as is also the young growth.

We have seen a specimen (absolutely matching one of our specimens of var. *minor*) in Allan Cunningham's handwriting in the Melbourne Herbarium labelled *Banksia paludosa*, R.Br. It is not the true *B. paludosa*, but not unlike it in general appearance, particularly in the long cylindrical spike as figured in *Bot. Reg.* t. 697, under *B. paludosa*.

We have also stated our opinion that the cones of *B. paludosa* as described by Meisner (DC. *Prod.* xiv. 457) are also referable to a form of *B. latifolia*.

BANKSIA PALUDOSA, R.Br.—Robert Brown in his *Prod.* No 394, has the following description :—" *B. paludosa*, foliis subverticillatis cuneato-oblongis subtruncatis basi attenuatis extra medium dentato-serratis margine subrecurvis: subtus costatis reticulato-venosis, petiolis ramulisque glabris perianthiis sericeis, caule fruticoso."

In *Bot. Reg.* t. 697, this plant is still called *B. paludosa* or the "Marsh Banksia." It was introduced into England by Brown in 1805, who found it in the marshes of Botany Bay, where it is far from abundant and may be reckoned as one of the rarer species.* It is described as "an upright shrub somewhat more than 3 ft. high," and the plant is more fully described than by Brown.

Meisner in DC. *Prod.* xiv. 457, still calls the plant *B. paludosa*, but Bentham (*B. Fl.* v. 554) makes it var. *paludosa* of *B. integrifolia*, and has the following note :—"Flowers scarcely larger than in *B. marginata*, the perianth 7 to 8 lines long, but the leaves of one of the common short-leaved forms of *B. integrifolia*."

The plant may be redescribed as follows (from perfectly fresh specimens) :—

A dwarf, spreading, much-branched shrub, from 1 foot to nearly three feet high, with glabrous branches.

Leaves with much recurved margins, generally in rather uneven whorls usually of 3 or 4, from $1\frac{1}{2}$ inches to 3 inches or a little longer, and from very narrow to about $\frac{3}{4}$ inch in their broadest part; not spreading, but pointing upwards at an angle of about 45° ; very distinctly obovate or almost spathulate, somewhat truncate, or obtuse, or sometimes bluntly pointed, gradually narrowed into the very short petiole, or sometimes almost sessile; stiffly coriaceous; irregularly toothed on the upper half; the mid-

* This remark appears still to hold good.

vein prominent, the smaller veins very plainly reticulate, the interspaces only slightly white tomentose.

Spikes cylindrical, usually from 2 to 4 inches long and $1\frac{1}{2}$ inches wide between the stigmatic tips, very distinctly rufous, which appearance is especially marked before the splitting of the corollas.

Styles not more than 8 lines long and inserted strictly at right angles to the axis of the spike, quite straight and needle-like, except sometimes the stigmatic end, which is slightly bent; the base away from the rather contracted point of insertion, very slightly flattened; the stigmatic end scarcely thickened.

The segments of the corolla-tube very obtuse, with very short, shining, and closely appressed hairs from base to summit.

The whorled arrangement of its leaves and their similarity in shape to *B. integrifolia* place it near to that species. In the latter, however, the young branches are densely tomentose, while the secondary veins of the leaves are almost transverse and comparatively straight. In *B. paludosa* the young branches are almost glabrous, and the secondary veins of the leaves are much more oblique with apparently a greater tendency to curve upwards. But the principal differences are in the flowers. In *B. integrifolia* the styles in the fully developed inflorescence stand away very prominently from the split segments of the corolla-tubes, more than half an inch, while also there is a very decided tendency for them to curve downwards. Its corolla-segments also cohere; they also adhere to the style, so that it is very easy to pull them out altogether in a little bundle. In *B. paludosa* this usually seems not possible, as when the floral organs are pulled away from the rhachis they come in detached pieces; the styles also as previously mentioned are quite straight and exactly at right angles to the rhachis; nor in the freshly developed flowers do the styles stand so far away comparatively from the corolla-segments.

We may also draw attention to the young inflorescence of *B. integrifolia* in which the unsplit corolla-segments have an almost perpendicular habit caused by the bending of the elongated style.

In *B. paludosa* this feature is very much less present, and often entirely wanting; when the segments split both they and the styles appear to be of the same length.

The only other Port Jackson species closely related to it is *B. marginata*, but here again the differences are very pronounced. Its young branches are very villous. The secondary veins of the leaves, if looked at carefully in a strong light, will be seen to be straight, fine, and quite parallel, while their teeth are also longer, more slender, and sharper than in *B. paludosa*. Their shape also is decidedly oblong.

The styles also of *B. marginata* are very much longer, and as in the case of *B. integrifolia*, stand away from the split corolla-segments a long distance, nor are they straight, but decidedly bent. The tips of the corolla-segments are also almost acuminate.

The only description of the cones of *B. paludosa* we can find is by Meisner, in DC. *Prod.* xiv. 457 :—"Folliculi valde compressi, circ. semipollicares, lanâ rufâ hirsuti, margine glabrescentes."

But we are of opinion that the cones thus described are probably those of our var. *minor* of *B. latifolia*; they certainly do not apply to *B. paludosa*.

In reality the cones of *B. paludosa* are not very dissimilar to those of *B. integrifolia*, and alone furnish a strong argument for the close affinity of the two species. In *B. integrifolia* the fruitlets dehisce at an early stage; in *B. paludosa* the reverse is the case, according to our observations. At present we are inclined to attach some practical importance to this in the discrimination of cones obviously so closely allied.

We have been exercised in deciding for ourselves whether *B. paludosa* is a true species or only a variety of *B. integrifolia*, but it is worthy of note that there is what may be termed the *paludosa* type, having varieties of its own, readily distinguishable from *B. integrifolia*, which is in reality one of the most distinct species of the genus. *B. integrifolia* has been considered far more protean than it really is by having other species constantly confused with it, and it is one of the objects of this paper to

elucidate two of the plants which have been so confused. Mere size of a plant of course counts but little, at the same time it may be pointed out that *B. integrifolia* is a tree of 30 or 40 feet high, while *B. paludosa* is a stunted bush of scarcely 3 feet.

Returning to *B. paludosa*, we observe variation in the size of the leaves, which are much smaller in one form and more woolly-tomentose beneath; the reticulation is not quite so apparent as in the form figured in *Bot. Reg.* t. 697. The flower-spike of this form is also from 2 to 3 inches long, and under an inch broad, in place of the form figured in *Bot. Reg.* which is $4\frac{1}{4}$ inches long and nearly $1\frac{1}{2}$ broad.

In another form we have the flower-spike of about the same length as that figured in *Bot. Reg.* t. 697, but only $\frac{7}{8}$ inch wide. In other respects these forms show remarkable similarity.

In fine, we are of opinion that *B. paludosa* is a good species, and we therefore recommend that Brown's name be restored.